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negative (film or glass) against the leaf, in either case permitting a very striking demonstration of the need for light in photosynthesis.

Both instruments appear to be correct in principle; both are convenient and efficient in manipulation; and they yield most satisfactory results. —W. F. Ganong, *Smith College, Northampton, Mass.*

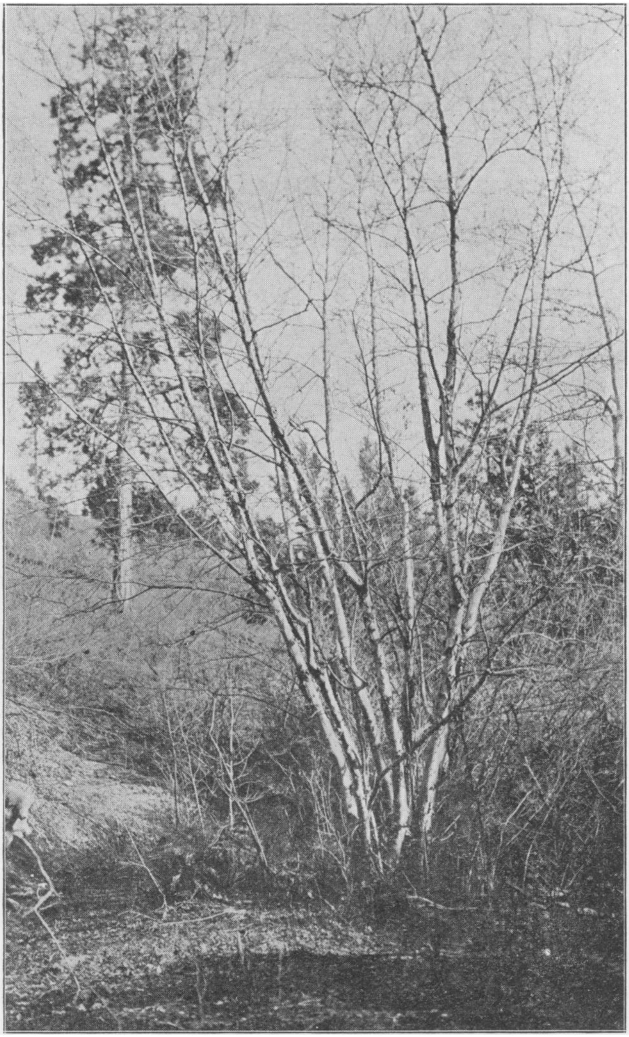
IS THIS BIRCH NEW?

(WITH ONE FIGURE)

The paper birch (*Betula papyrifera* Marsh.) has never been reported from Colorado. The nearest region to Colorado from which authentic specimens have been obtained is probably the Black Hills in northwestern Wyoming and adjacent South Dakota. It was therefore a great surprise when Mr. D. M. Andrews of Boulder, Colorado, reported finding a birch which in many respects resembles *B. papyrifera*. He writes of it as follows: "About three miles from Boulder on the north slope of Green Mountain, altitude 6500–7000 feet, I find one hundred trees, more or less, of the species from which I send you specimens."

An examination of the material sent, which, by the way, was secured so late in the season that the specimens are not in good condition, indicates its affinity to *B. papyrifera*. It cannot be referred to the var. *cordifolia*. and it is even less like typical *B. papyrifera*. In the material so far available, however, it is difficult to point out specific distinctions. From the latter it differs in the darker bark, which on the trunk is marked by long transverse rifts (lenticels). The current season's twigs of Andrews' specimens are light brown, the two-year-old twigs more or less grayish, and the older branches reddish brown and distinctly marked by the white oval lenticels. The bark on the main trunks is silvery gray, materially darker than in *B. papyrifera*, though it peels readily into layers as in that species. The leaves do not seem to differ essentially, being either broadly cuneate or rounded at the base. The margin is rather sharply and irregularly serrate, though the teeth are not long. The apex is somewhat abruptly short-acuminate. The bracts of the fruit are deeply 3-lobed, the central lobe being longer and narrower than the lateral. The nut is oblong-obovate, with very thin wings nearly twice as broad as the body.

Its habit is perhaps its strikng character. In *B. papyrifera* there is usually a single trunk, which branches above in true tree fashion. Andrews writes of his birch as follows: "You will notice the uniform tendency to form clumps or stools, which is true of quite young specimens. The photograph of the older clump shows trunks about six inches in diameter, which seems to be the maximum, after which the old trunks die and are replaced by young sprouts from the same root. While the difference in size (between this and *B. papyrifera*) may be due to differences of environ-



Betula, n. sp. ?, showing characteristic habit; collected near Boulder, Colorado, by D. M. Andrews.

ment, I do not believe it to be entirely so, and suspect that in cultivation they would remain distinct, age for age, *B. papyrifera* growing more rapidly."

Further studies another season may show other characters that will absolutely separate this newly found birch from *B. papyrifera.* Should such be the case, the writer will then propose the name **Betula Andrewsii** for this new find, in honor of Mr. ANDREWS, whose diligent studies and discriminating observations in the field are again recognized—studies the more valuable because the opinions formed in the field are usually verified in his experimental and nursery grounds at Boulder.—AVEN NELSON, *University of Wyoming, Laramie.*

RHODODENDRON ALBIFLORUM WITH DOUBLE FLOWERS

While on a botanizing tour with Mr. J. G. JACK in British Columbia in the summer of 1904, we were staying several days at Glacier, the station of the Canadian Pacific R. R. close to the foot of the Great Glacier of the Selkirks, to explore the surrounding country. Just above the hotel in the Asulkan valley there is a grove of *Tsuga Mertensiana* and *T. heterophylla,* through which a path leads to the foot of the glacier. As I left this path to cross a thicket of small hemlocks to the bank of the Asulkan River, I noticed close to the brink of the river a large shrub of *Rhododendron albiflorum* in full bloom which at once attracted my attention, as all other shrubs of this species were past flowering; and I was very much astonished to find on coming nearer that it bore large white double flowers very much like those of the double cherries sometimes cultivated in gardens. It was a strange sight in these wild and rough mountain woods to see such blossoms which one associates involuntarily with the finished surroundings of a well-kept garden. What agency caused the origin of such a form? Close by grew the typical form, and there was nothing unusual in the place or position where the shrub grew, nor in the shrub itself aside from its double flowers. This is probably the first time that a double-flowered Rhododendron has been found in this country. Though reports of the occurrence of double-flowered plants in a wild state are not wholly lacking, they are nevertheless rare. In the European Alps *Rhododendron ferrugineum* has been found at least twice with double flowers, as reported by A. KERNER (Oesterr. Bot. Zeits. **15**:285. 1865), who himself found in one locality a large number of shrubs with double flowers.

As in most double flowers, the cause of this teratological aberration is in this case petalody of stamens combined with a considerable increase